

ABSTRACT OF THE DISCLOSURE

An irradiation apparatus has a large irradiation field and is capable of ensuring the uniformity of a dose distribution without strengthening the performance of an irradiation field enlarging device. The irradiation apparatus includes a beam interruption part for performing a plurality of irradiations of a radiation beam, a position control part for controlling a location to be irradiated in such a manner that the entire surface of the target can be irradiated in a plurality of irradiation zones including an overlapping area formed by the plurality of irradiations, and a multileaf collimator control part for providing a slope to a dose distribution in the overlapping area of the respective irradiation zones, so that the dose distribution over the entire surface of the target including the overlapping area is made flat or uniform by the plurality of irradiations of the radiation beam.